

**Amendments to the Claims:** This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.-17. (Cancelled)

18. (New) A brushless DC motor coupled directly to an AC source, the motor comprising:
- (a) a stator including a stator coil;
  - (b) a rotor including a rotor magnet;
  - (c) a magnetic flux sensor for sensing magnetic-flux of the rotor magnet;
  - (d) an inverter circuit including a plurality of switching elements coupled in a full-wave bridge having an upper arm and a lower arm;
  - (e) a plurality of AC source couplers;
  - (f) a rectifier for full-wave rectifying a voltage of the AC source;
  - (g) a DC voltage converter for converting a rectified voltage supplied from the rectifier into a low DC voltage, and for applying the low DC voltage to the inverter circuit as a power supply;
  - (h) a controller for controlling the inverter circuit based on a signal supplied from the magnetic flux sensor such that the low DC voltage is supplied to the stator coil in a full-wave driving method; and
  - (i) a current controller for regulating an average current value applied to the inverter circuit constantly at a set current;
  - (j) a set current changer for changing the set current regulated by the current controller;
- wherein the set current changer changes the set current regulated by the current controller in response to which terminals of the AC source couplers are coupled to the AC source.

19. (New) A brushless DC motor coupled directly to an AC source, the motor comprising:
- (a) a stator including a stator coil;
  - (b) a rotor including a rotor magnet;
  - (c) a magnetic flux sensor for sensing magnetic-flux of the rotor magnet;
  - (d) an inverter circuit including a plurality of switching elements coupled in a full-wave bridge having an upper arm and a lower arm;

- (e) an AC source coupler;
  - (f) a rectifier for full-wave rectifying a voltage of the AC source;
  - (g) a DC voltage converter for converting a rectified voltage supplied from the rectifier into a low DC voltage, and for applying the low DC voltage to the inverter circuit as a power supply;
  - (h) a controller for controlling the inverter circuit based on a signal supplied from the magnetic flux sensor such that the low DC voltage is supplied to the stator coil in a full-wave driving method;
  - (i) a current instructing means for instructing the average current value for supplying to the inverter circuit;
  - (j) a current controller for regulating the average current value supplied to the inverter circuit constantly at a instructed value; and
  - (k) an output means for outputting a signal of a motor rpm based on a signal supplied from the magnetic flux sensor;
- wherein the current instructing means instructs the average current value for supplying to the inverter circuit in response to the motor rpm.

20. (New) The brushless DC motor of claim 19, wherein the AC source coupler includes a plurality of terminals,

wherein the current instructing means changes an instruction of the average current value in response to the motor rpm depending on which terminals of the AC source coupler are coupled to the AC source.

21. (New) The brushless DC motor of claim 19, further comprising:

a detecting means for detecting a rpm range of the motor within which the motor rpm is included,

wherein the current instructing means instructs the average current value for supplying to the inverter circuit in response to the rpm range of the motor.

22. (New) The brushless DC motor of claim 18 further comprising:

a current instructing means for instructing an average current value to the inverter circuit; and

a terminal for connecting a voltage reducing means disposed outside the motor,

wherein a signal voltage which instructs the average current value to the inverter circuit is applied to the current instructing means via the voltage reducing means disposed outside the motor and

wherein the signal voltage instructs the inverter circuit to run a constant current.

23. (New) The brushless DC motor of claim 19 further comprising:  
a terminal for connecting a voltage reducing means disposed outside the motor,  
wherein a signal voltage which instructs the average current value to the inverter circuit is applied to the current instructing means via the voltage reducing means disposed outside the motor and  
wherein the signal voltage instructs the inverter circuit to change a current in response to the motor rpm.
24. (New) The brushless DC motor of claim 21 further comprising:  
a terminal for connecting a voltage reducing means disposed outside the motor,  
wherein a signal voltage which instructs the average current value to the inverter circuit is applied to the current instructing means via the voltage reducing means disposed outside the motor and  
wherein the signal voltage instructs the inverter circuit to change a current in response to the rpm range of the motor.
25. (New) An electric apparatus in which the brushless DC motor as defined in claim 18 is mounted.
26. (New) An electric apparatus in which the brushless DC motor as defined in claim 19 is mounted.